

What is claimed is:

1. A surgical apparatus for delivering conductive fluid to a target site for subsequent formation of a virtual electrode to ablate bodily tissue at the target site by applying a current to the delivered conductive fluid, the apparatus comprising:
an elongated device forming a helical needle assembly including a first helical needle configured to engage bodily tissue, the first helical needle being hollow for delivering conductive fluid from a fluid source and forming a needle tip.
2. The surgical apparatus of claim 1, wherein the first helical needle forms an electrode.
3. The surgical apparatus of claim 1, wherein the first helical needle includes a plurality of adjacent coils, and further wherein a pitch between each of the plurality of adjacent coils is variable.
4. The surgical apparatus of claim 3, wherein the pitch decreases proximally along at least a portion of the length of the first helical needle.
5. The surgical apparatus of claim 1, wherein the first helical needle includes a plurality of adjacent coils defining an outer diameter, and further wherein the outer diameter is variable along at least a portion of a length of the first helical needle.
6. The surgical apparatus of claim 5, wherein the outer diameter decreases proximally from the needle tip.
7. The surgical apparatus of claim 5, wherein the outer diameter increases proximally from the needle tip.

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8. The surgical apparatus of claim 5, wherein the first helical needle includes a proximal portion, a central portion and a distal portion, and further wherein the outer diameter decreases from the central portion to the proximal portion and the distal portion.
9. The surgical apparatus of claim 5, wherein the first helical needle includes a proximal portion, a central portion and a distal portion, and further wherein the outer diameter increases from the central portion to the proximal portion and the distal portion.
10. The surgical apparatus of claim 1, wherein the helical needle assembly further includes:
a second helical needle concentrically arranged with the first helical needle, the second helical needle having an outer diameter less than an inner diameter defined by the first helical needle.
11. The surgical apparatus of claim 1, wherein the helical needle assembly further includes:
a second helical needle wound parallel with the first helical needle.
12. The surgical apparatus of claim 1, wherein the helical needle assembly further includes:
a second helical needle concentrically disposed within the first helical needle.
13. The surgical apparatus of claim 1, wherein the first helical needle includes:
a central shaft, the shaft being hollow for delivering conductive fluid; and
a helical flight extending from an outer circumference of the central shaft.
14. The surgical apparatus of claim 1, wherein the first helical needle includes:
a substantially straight tube, the tube being hollow for delivering conductive fluid;
a disc extending radially from the tube; and

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a plurality of starter threads extending from the disc spaced from the tube, the plurality of starter threads defining a helical pattern.

15. The surgical apparatus of claim 1, wherein the first helical needle forms openings along at least a portion of an outer diameter for delivering conductive fluid.

16. The surgical apparatus of claim 1, wherein the first helical needle forms a continuous slit along an outer diameter for delivering conductive fluid.

17. The surgical apparatus of claim 1, wherein the first helical needle forms a continuous slit along an inner diameter for delivering conductive fluid.

18. A surgical system for creating a virtual electrode to ablate bodily tissue, the system comprising:

a fluid source maintaining a supply of conductive fluid;

a current source for selectively supplying a current; and

a surgical instrument including:

an elongated device for forming a helical needle configured to engage bodily tissue, the helical needle being hollow and fluidly connected to the fluid source for delivering the conductive fluid and terminating in a needle tip,

an electrode associated with the helical needle, the electrode being connected to the current source for applying a current to conductive fluid delivered from the helical needle to create a virtual electrode.

19. The surgical system of claim 18, wherein the helical needle includes a plurality of adjacent coils, and further wherein a pitch between each of the plurality of adjacent coils is variable.

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20. The surgical system of claim 18, wherein the helical needle forms openings along at least a portion of an outer diameter of the first helical needle for delivering conductive fluid.

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